

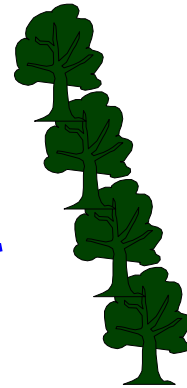
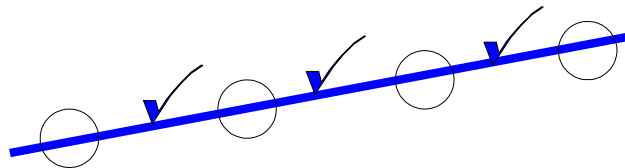
Colorado River Salinity Control Program

Mancos Valley Unit

Monitoring And Evaluation

2005 Report

March 2006



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Mancos Valley Unit, Colorado River Salinity Control Program

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Part 1
M&E EXECUTIVE SUMMARY
HYDROSALINITY

Project: Mancos Unit

- The project plan is to treat 7,020 acres with improved irrigation systems.
- To date, 114 acres have improved irrigation systems.
- The project plan is to reduce salt loading to the Colorado River system by 11940 tons of salt.
- In FY2005, salt loading has been reduced by 612 tons/year.
- The cumulative salt load reduction is 612 tons/year.

Cost effectiveness-

- The *planned* cost per ton of salt saved with prior year contracts is \$ 43.63 /ton.
\$/Ton is based on the following formula:

FA + TA= Total Cost X Amortization Factor= Total amortized cost
Total amortized cost divided by total annual tons salt saved= Cost/Ton

FA is total dollars obligated in EQIP & Parallel Program (excluding wildlife).
TA is 67% of the FA (This number includes education and monitoring).
Amortization factor for 2004 is .07546

M&E EXECUTIVE SUMMARY
ECONOMIC & SOCIAL

CONTRACT INACTIVITY

- During the past fiscal year, were there any contracts found in non-compliance, or were there any cancelled contracts that had remaining items to complete.

Yes ☐ No ☒

- If yes, indicate the level of significance or insignificance_____

OTHER PROGRAM BENEFITS

- Considering changes in crop production costs and returns as a result of the salinity practices, has there been a:

Positive effect No effect Negative effect

Explain: *_Second year of project, so no data on this yet.*

- Is there information collected that indicates effect of program on economic and environmental benefits to the community?

Yes No

Explain: *__ Second year of project, so no data on this yet.*

M&E EXECUTIVE SUMMARY FOR “OTHER RELATED ITEMS”

- IRRIGATION INDUCED EROSION-** Does the project award ranking points for control of irrigation induced erosion?

Yes ☒ No

- IRRIGATION WATER MANAGEMENT PROGRAM-** Is there an effective funded education program?

☒ Yes No

Briefly Explain: *_The NRCS field office conducted workshops concerning methods of determining timing of irrigation events and will work with participants one on one once irrigation systems have been installed..*

Part 2
M&E EXECUTIVE SUMMARY- MANCOS WILDLIFE

Fiscal year 2005 was the first year the Mancos Valley became funded under the Salinity Control Program. To date, eight contracts have been approved for funding, two of them being wildlife contracts. No contracts have been applied yet. A total of \$3,315,364.00 has been obligated with \$341,729.00 (10%) obligated for wildlife contracts.

Acres of Wildlife Habitat Applied 2005

	Cumulative acres 2004	Cumulative acres 2005	Net change for 2005
Upland	0	352.8	352.8
Wetland	0	2.4	2.4

Wetland Data 2005

Cumulative acres impacted year 2004	Cumulative acres impacted year 2005	Net AREM Unit change 2004	Net AREM Unit change 2005	Net change for 2005
0	16.9	0	4.37	4.37

Funding for Wildlife Habitat 2005

% of total funds obligated for wildlife through 2004	% of total funds obligated for wildlife through 2005
23%	10%

% of total funds spent on wildlife through 2004	% of total funds spent on wildlife through 2005
0	27% (\$92,856.00)

Explanation of the above results and planned wildlife program adjustments for next fiscal year: No progress was reported in 2004. In 2005 one contract was implemented that had long term impacts to wetlands and these were positive. Included in the Executive Summary is a table for percentage of funds spent on wildlife as well as obligated. Cumulative totals for dollars obligated for wildlife dropped. Projects were not as large for 2005 compared to 2004 even though some of the perceived benefits will be greater.

Part 3 **M&E REPORT, WILDLIFE**

I. History and Background

A. Project Setting

The Mancos Valley Salinity Control Unit is located within Eastern Montezuma County in the Southwest corner of Colorado. It lies between prominent physiographic features such as the LaPlata Mountains to the northeast, with peaks over 12,000 feet in elevation, and Mesa Verde rising to an elevation of about 8,400 feet to the southwest. The elevation at Mancos is approximately 7,000 feet above sea level.

Most of the moisture comes in the form of late summer rains and winter snowfall. The total drainage area of the Mancos Valley is 131,200 acres. This includes the Mancos River and its major tributaries Mud Creek, Weber Creek, and Chicken Creek.

The climate is semi-arid with an average annual precipitation of 16 inches. Most of the farmed land is irrigated by surface water. The major source of irrigation water is the Mancos River with a mean daily flow of 48 cubic feet per second. Other minor water sources include Chicken Creek and Lost Canyon Creek.

Much of the valley is underlain by Mancos shale usually only a few feet below the ground surface in the lower portions of the valley. Some portions are underlain by gravelly, cobbly and stony alluvium. Soils are fairly diverse ranging from predominant clay and silty clay loams to stony, gravelly loams to a lesser extent.

Most of the cropland in the valley is irrigated grass pasture. Some alfalfa is also grown.

B. Methods of Wildlife/Habitat Assessment

At this time we are considering using 7 wildlife species models in order to evaluate the 7 predominant cover types in (see list below).

SPECIES	COVERTYPES
➤ Gambels quail	Perennial Herbland (PERHERB)
➤ mallard	Woodland (WOODY)
➤ southwest willow flycatcher	Pasture and Hayland (AP)
➤ Turkey	Native Rangeland (SSSB)
➤ Trout	Palustrine Emergent Wetlands (PEM)
➤ Mule Deer	Streams, Rivers and Canals (RIVERSn)
➤ Pheasant	Lakes, Ponds and Reservoirs (LAKESn)

NRCS also conducted a wetland inventory which basically ground-truthed a 1982 U.S. Fish & Wildlife Service inventory. These wetlands were mapped, and classified according to the Cowardin System for Classification of Wetlands and Deepwater Habitats. Wetland types were mapped in ARCVIEW to come up with acreage estimates by type and a representative sample were given a wildlife value rating using the Avian Richness Evaluation Method developed by Paul R. Adamus. This assessment yields bird species composition and richness of lowland wetlands and riparian areas within the Colorado Plateau region of western Colorado.

C. Environmental Assessment Conclusions

Mitigation is a mechanism for addressing adverse project impacts on fish and wildlife resources. It can be accomplished by reducing, avoiding, rectifying or compensating adverse impacts. The Colorado River Basin Salinity Control Act, Public Law 93-320 as amended by PL 98-569: 88 Stat. 266, does not contain the word "mitigation". It does provide for the "...voluntary replacement of incidental fish and wildlife values foregone;" NRCS developed wetland policy (7CFR 650.26) in compliance with N.E.P.A. Executive Order 11990. This policy was written to allow for certain policy exceptions to meet NRCS water quality and water conservations objectives. NRCS will make every effort to work with customers to voluntarily replace wildlife habitat using approved wildlife practices under the program.

D. Environmental Commitments

NRCS will attempt to voluntarily obtain both upland and wetland habitat replacement with landowners participating in the program. Upland and wetland habitat impacts will be noted and replacement achieved as opportunities arise.

Other agencies or entities, such as the Colorado Division of Wildlife, US Fish & Wildlife Service, Ducks Unlimited, etc., will be given the opportunity to assist with planning replacement practices, reviewing NRCS replacement efforts and evaluating practice effectiveness.

E. Changes Since EA Was Issued

Methods of assessment have been changed. Since we no longer have the capability of running HSI species models listed in the this section through HEP we have developed species models in excel spreadsheet format which will be run to evaluate habitat impacts. So far we have models for mallard, mule deer, pheasant, turkey, gambels quail, southwest willow flycatcher and trout which will be used. A model for common snipe will need to be developed to capture in field PEM wetland habitat impacts. New Mexico has also developed a riparian habitat assessment tool which will be incorporated also since we will be impacting river and stream corridors in the Mancos Valley.

II. Current Methods

A. Assessments/Evaluation

AVIAN RICHNESS EVALUATION PROCEDURES (AREM)

Paul R. Adamus developed this evaluation method in cooperation with the Environmental Protection Agency for use in the "lowland wetlands of the Colorado Plateau" (specifically the Salinity Control Units in Utah, Colorado and Wyoming).

In 1994 the State of Colorado Natural Resources Conservation Service decided to adopt AREM for evaluating wetland impacts in the McElmo Creek, Lower Gunnison and Grand Valley salinity control units.

We will use this method in the Mancos Valley Unit also.

Values are obtained by averaging the "six habitat scores weighted by species," multiplied by .01, and then multiplied by the acres to obtain unit values.

WILDLIFE SPECIES MODELS

The State of Colorado NRCS has developed and is continuing to develop wildlife species models to evaluate habitat changes due to project or practice implementation. These assessment tools will allow NRCS to place a numerical value on a particular cover type for a representative species utilizing that cover type for a critical need (i.e., nesting, cover, etc.). This value can then be converted to "Unit Values".

B. Wildlife Practices

Wildlife practices will include the following:

- Grass/legume cover plantings for upland nesting and roosting
- Shallow water developments for waterfowl and shorebird feeding and resting
- Tree and shrub plantings for upland wildlife nesting, roosting and food
- Fencing to exclude livestock grazing either permanently or during critical use periods
- Bioengineering practices to improve or protect riparian habitat
- Occasional development of irrigation to improve forage quality for wildlife
- Rock drop structures to improve cold water fish habitat
- Forest Stand Improvement
- Brush Management
- Riparian Forest Buffer

III. Results

A. Impacts

Since October 1, 2004 we have begun implementing contracts written for fiscal years 2004 and 2005. Long term negative impacts to wildlife habitat were minimal. Approximately 3 acres of pinyon/juniper woodland were eliminated over a 5 mile stretch to install an irrigation delivery pipeline. For the most part this pipeline followed a cleared gas line right-of-way. Approximately 49 acres of pinyon/juniper were thinned and native grasses were planted throughout the stand in 2005. A 450 acre farm/ranch consisting of riparian habitat, cropland, pinyon/juniper woodland, and sagebrush steppe has been converted from an agricultural operation to a strictly wildlife managed property.

B. Applied Practices (2004-2005)

- Cover plantings encompass perennial herbaceous grass/forb plantings in upland sites that were once cropland (either irrigated or non-irrigated) or overgrazed rangeland .
- Fencing was done to exclude livestock grazing (either permanently or during critical wildlife use periods) from all cover types, but especially wetland habitat.
- Pipelines and sprinklers were installed on dry land or abandoned irrigated fields in order to produce denser cover for upland bird nesting or roosting, and higher quality forage for big game.

- Trees and shrubs were planted in rows and clumps to provide food, nesting and roosting cover for upland birds. Some plantings were also installed to provide browse for big game.
- Shallow water development includes ponds and potholes. Most pond designs incorporated both deep and shallow water.
- Wetland and upland wildlife habitat management was dependant on landowners priorities. To be qualified and quantified as management, landowners need to adhere to NRCS management guidelines for the practices in place, the habitat type, the species of concern and the critical use period(s) of that species.
- Pinon/juniper woodlots were thinned to open up the canopy and reduce competition for grasses forbs and shrubs to establish and in some cases seeding took place to facilitate understory enhancement.

Table 1

(Replacement Summary-Applied 2004-2005)

Practices	Planned	Applied
Cover Plantings	210.2 ac.	112 ac.
Fencing		
Pipelines	20,288 ft.	5418.20
Tree/shrub Plantings		
Sprinklers	3	3
Wildlife Upland Habitat Mgt.	434.8 ac.	352.8 ac.
Shallow Water Development	1	5
Timber Stand Improvement		
Wildlife	16.9 ac.	16.9 ac.
Wetland Habitat Management		
Gated Pipe	2070 ft.	0
Rock Drop Structures		
Riparian Forest Buffer	2 ac.	0

**AREM-2004-
2005**

AREM WETLAND SCORES FOR EQIP PRIORITY APPLIED CONTRACTS						CONTRACTS NOT APPLIED			
NAME	ACRES	EXISTING	APPLIED	NET CHANGE	WETLAND TYPE	NAME	ACRES	EXISTING	WETLAND TYPE
Lone Canyon Ranch	14.5	16.095	19.62	3.53	RIV/PEM Complex				
Cloy	2.4	1.98	2.82	.84	PEM/LAC Complex				
TOTAL				4.37					

IV. Discussion of Results

A. Problems/Issues

1. Procedures: For the most part many landowners within the Mancos Valley appear to be agreeable to developing or preserving habitat on their land. Those with holdings along the Mancos River are especially interested. There appears to be a strong interest in preservation of agricultural lands also. Quite a percentage of large tract farms and ranches have placed or are in the process of being placed into conservation easements.

Urban sprawl is occurring but not at the rate of the McElmo Unit. The larger tracts appear to be bought up by individuals with no interest in development.

Cumulative impacts from NRCS salinity activities on agricultural land should have little affect on wildlife habitat. Much of the irrigated land is already under sprinkler. Small acreages will continue to be entered into the program for some type of irrigation improvement, but habitat values are minimal to begin with.

The quality of habitat will increase where marginal cropland has become more productive under new irrigation systems and better management. Capitalizing on the increased interest in "Conservation Easements" and the active participation of the local land conservancy and conservation district, it will be possible to find more opportunities within the Mancos Valley project boundary.

As in the McElmo Unit we are also evaluating program applications based upon the criteria of a specific resource. Wildlife habitat applications are evaluated separate from irrigation applications (although we will fund other resource concerns within the same contract if they fit into a comprehensive land treatment plan that the landowner wishes to implement).

2. Assessment/Evaluation: With the current staffing levels and workload, the types of monitoring and evaluating procedures we are utilizing work well. It would be impossible to monitor and track changes to habitat on every land unit we are working on. Again, our goal is to work intensively with the few who are interested and have the resource potential.

B. Progress With Replacement:

Voluntary replacement efforts are meeting the expectation for the area. This could change as we work with more landowners but that appears not to be the case.

V. Conclusion

The future potential for habitat development/improvement within the project area appears to be good. Mancos Valley citizens are very aware that the Mancos River, its surrounding landscape and the wildlife it supports are valuable resources to be protected and improved.